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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,968	02/06/2004	Paul D. Shirley	MIO 0112 PA/40509/272	7341
23368 7590 05/12/2009 DINSMORE & SHOHL LLP ONE DAYTON CENTRE, ONE SOUTH MAIN STREET SUITE 1300 DAYTON, OH 45402-2023				
EXAMINER EDWARDS, LAURA ESTELLE				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/773,968

Applicant(s)

SHIRLEY, PAUL D.

Examiner

Laura Edwards

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 21-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 16, 18, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujimoto (US 5,939,139).

Fujimoto provides a resist application device comprising a rotatable substrate support (2); a resist dispenser (11) configured to deposit resist onto a substrate positioned on said support; a control fluid supply (22, 44) effecting localized change in a rate of evaporation of said deposited resist, the control fluid supply (see Fig. 1) configured to dispense a solvent-free gas, the gas being air or an inert gas (col. 5, lines 23-26; col. 7, lines 14-32); and a controller (20) cooperative with said control fluid supply such that said control fluid supply is capable of varied placement of control fluid onto said deposited resist to effect a substantially uniform thickness layer thereof.

With respect to claim 2, see nozzle (22) for supplying air or inert gas.

With respect to claim 16, the apparatus is enclosed by housing or casing (50) and thus is environmentally controllable.

With respect to claim 20, note that the nozzle (22) can supply air.

Claims 1-7, 10, 12-15, 16-18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tateyama et al (US 5,919,520) for reasons set forth in the previous office action.

With respect to amended claims 1, 5, 14, 16, and 20, Tateyama provides a control fluid supply of oxygen (col. 8, lines 45+) which includes no solvent thus, the instantly claim invention remains structurally anticipated.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto (US 5,939,139) in view of Tateyama et al (US 5,919,520).

The teachings of Fujimoto have been mentioned above but Fujimoto is silent concerning the control fluid supply comprising plural nozzles. However, it was known in the art at the time the invention was made to provide for a control fluid supply including plural outlets (85) defining plural nozzles to supply a control fluid such as oxygen to a resist coated substrate along a length of the substrate surface as evidenced by Tateyama (col. 8, lines 45+). It would have been obvious to one of ordinary skill in the art to provide plural nozzles as taught by Tateyama in the Fujimoto apparatus as the control fluid supplied would enable coverage of a greater surface area of the treated substrate.

With respect to the positioning of the nozzles, Fujimoto provides a controller (20) to facilitate positioning of the control fluid supply such that it would be within the purview of one skilled in the art to control positioning of the control fluid supply nozzles as defined by the combination above as desired with respect to the surface of the substrate.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tateyama et al (US 5,919,520) in view of Matsuyama (US 2002/0176936) for reasons set forth in the previous office action.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tateyama et al (US 5,919,520) in view of Chappa et al (US 7,077,910) for reasons set forth in the previous office action.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tateyama et al (US 5,919,520) in view of Fujimoto (US 5,939,139).

The teachings of Fujimoto have been mentioned above but Fujimoto is silent concerning the control fluid supply being an inert gas. However, it was known in the art at the time the invention was made to provide either oxygen or an inert gas as the control fluid supply to treat a coated substrate as evidenced by Fujimoto (col. 5, lines 23-26; col. 7, lines 14-32). In view of the teachings of Fujimoto, it would have been obvious to one of ordinary skill in the art to optionally provide an inert gas instead of oxygen as the control fluid supply in the apparatus of Tateyama because the gas would remain solvent free yet serve to treat the resist coated substrate. One of ordinary skill in the art would expect that the inert gas would less likely interact with the coating solution applied to the substrate.

Response to Arguments

Applicant's arguments filed 1/26/09 have been fully considered but they are not persuasive.

Applicant contends that Tateyama, the '520 patent should be withdrawn from all rejections because there is no gaseous control (not at column 4, lines 38 through 46) but merely a

liquid solvent that by operation of a pressurized nitrogen gas is fed to the wafer substrate. There is nothing in the '520 patent that suggests that the nitrogen makes up the control fluid.

Tateyama, the '520 patent remains to read on the instantly amended claimed invention because Tateyama provides an apparatus having the structure instantly claimed. Applicant is reading more into gaseous control than what is structurally required. Tateyama provides a nozzle (80) which is capable of supplying solvent-free air to only a portion or desired part of the coated substrate which is required by claims, 1, 5, 14, 16, and 20. The Examiner has made no reference to the supply of nitrogen gas in the rejection(s) under Tateyama. Thus, the rejection(s) under Tateyama stand.

Applicant contends that the Examiner has failed to establish a prima facie case of obviousness with any of the cited prior art including the '520 patent of Tateyama because none teach or suggest a substantially solvent-free gaseous control fluid being supplied to a layer of deposited solvent-containing resist coating in order to control a localized rate of evaporation of the resist. Applicant does acknowledge that the introduction of gas is global (i.e., within the substantial entirety of the coating chamber) rather than to a discrete location on the item being coated.

This argument is unconvincing to remove the rejections under the cited prior art, including the '520 patent to Tateyama because Tateyama does provide nozzle (80) which is capable of supplying solvent-free air to only a portion or desired part of the coated substrate which is required by claims, 1, 5, 14, 16, and 20. Tateyama does not explicitly teach or suggest that the air nozzle (80) controls a localized rate of evaporation of the resist but one of ordinary skill in the art would expect that if the solvent-free air supplied from nozzle (80) was directed to

a portion of the coated substrate, the nozzle would be capable of effecting the instantly claimed function of controlling local evaporation from coated substrate. Regardless, the intended use of the control fluid supply to effect change in evaporation rate of deposited resist would be an insufficient ground to warrant a grant of patentability over the cited prior art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura Edwards/
Primary Examiner
Art Unit 1792

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May 6, 2009